



King County

Department of Natural Resources and Parks

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Public Health Seattle & King County

Office of the Director

401 Fifth Avenue, Suite 1300
Seattle, WA 98104-1818

August 10, 2023

VIA ELECTRONIC MAIL ONLY

Attn: East Waterway Proposed Plan
c/o Laura Knudsen
U.S. Environmental Protection Agency Region 10
1200 6th Ave., Suite 155
Superfund Records Center, MS: 17-C04-1
Seattle, WA 98101
EastWaterwayComments@epa.gov

RE: EPA's Proposed Plan on East Waterway Operable Unit of Harbor Island Superfund Site

Dear Ms. Knudsen:

King County welcomes the release of the U.S. Environmental Protection Agency's (EPA) Proposed Plan for cleanup of the East Waterway Operable Unit of the Harbor Island Superfund site along the mouth of the Duwamish River. The plan will build on the progress we've made over the last 50 years to improve water quality and reduce sources of pollution to the Duwamish River for the protection of human health and the environment.

Implementing a cleanup plan to address historical contamination in the East Waterway is one of our top environmental priorities and will greatly benefit the communities near the East Waterway area. It is critically important that we listen and learn from those communities as we all work to implement an equitable and effective cleanup plan.

King County supports EPA's Preferred Alternative of a modified version of Alternative 3B(12) as the cleanup remedy for the East Waterway. EPA's Preferred Alternative provides for a comprehensive sediment cleanup that will substantially reduce risks to human health and the environment. The Preferred Alternative will make the East Waterway a more fishable river by remediating contaminated sediments and reducing contaminant sources to the waterway. King County also supports a broader watershed source reduction program, implemented by multiple agencies and communities, that will be needed to fully address safe fish consumption in the East Waterway.

Laura Knudsen / EPA's Proposed Plan on East Waterway Operable Unit of Harbor Island Superfund Site
August 10, 2023
Page 2

As noted in public meetings, the remedy is one of the most comprehensive sediment cleanups developed in our region. As such, the County urges EPA to adopt a final Record of Decision (ROD). Doing so will help achieve EPA's and the community's goals for the East Waterway, and other benefits can also be achieved. The benefits of a final ROD include:

- **Reduction in unnecessary risk to public agencies and ratepaying customers** by providing greater certainty on what actions will ultimately be required. This more easily allows public entities to secure financial contributions for the cleanup from other Potentially Responsible Parties (PRPs), who will be more likely to pay their fair share towards a final cleanup to avoid potential future liability.
- **Communicating a clear and transparent message to the public about the cleanup.** The Preferred Alternative includes all measures that can practicably be undertaken to achieve cleanup of the waterway. In addition, under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), EPA has sufficient authority to ensure the remedy works as intended. The plan can also take note of additional source control efforts in the Green/Duwamish Watershed under a separate regulatory program that will help achieve the long-term vision for the river.

We also support EPA's long-term vision to achieve the lowest possible concentration for Polychlorinated Biphenyls (PCBs) to protect human health related to seafood consumption by working collaboratively to address sources of contamination. King County will continue to make major investments in our wastewater system to improve water quality and serve our region's needs for decades to come. These investments are forecasted to cost \$7 billion over the next 10 years. Projects include controlling two combined sewer overflows (CSOs) that discharge to East Waterway and continuing source control investigations to reduce or eliminate sources of contamination.

We also request that EPA adopt cleanup levels now. Including all remedial action objectives and associated cleanup levels now would allow the ROD to be adopted as final. While we agree that source control actions within Green/Duwamish Watershed will greatly influence the ultimate sediment concentrations for PCBs, dioxin/furans, and arsenic in East Waterway, we do not believe this prevents establishing cleanup levels now for these contaminants. A final ROD can set these cleanup levels now but include language that they could be revised later based upon sediment cleanup monitoring information and the success of upstream source control efforts. By doing so, EPA would be providing clarity to the community and PRPs as to how the site is expected to reach closure with cleanup levels that are protective of human health.


We are committed to a timely and effective cleanup of the East Waterway to improve public health and protect the environment. A successful cleanup will bring numerous health, environmental, social, and economic benefits to the affected communities and the region.

Laura Knudsen / EPA's Proposed Plan on East Waterway Operable Unit of Harbor Island
Superfund Site
August 10, 2023
Page 3

If you have questions or need more information, please contact Debra Williston, Sediment Management Program at the Wastewater Treatment Division in the Department of Natural Resources and Parks, at 206-477-4850 or by email at debra.williston@kingcounty.gov.

Sincerely,

DocuSigned by:


Christie True

Director, Department of Natural Resources and Parks, King County

DocuSigned by:


Faisal Khan

Director of Public Health, Seattle & King County

Enclosure: King County Detailed Comments on EPA Proposed Plan for the East Waterway

e-cc: Casey Sixkiller, Region 10 Administrator, United States Environmental Protection Agency (EPA)
Calvin Terada, Region 10 Director, Superfund and Emergency Management Division, EPA
Barry Breen, Acting Assistant Administrator, Office of Land and Emergency Management (OLEM), EPA
Larry Douchand, Director, Office of Superfund Remediation and Technology Innovation (OSRTI), EPA
Laura Watson, Director, Washington State Department of Ecology (Ecology)
Barry Rogowski, Program Manager, Toxics Cleanup Program, Ecology
The Honorable Dave Upthegrove, King County Council Chair, Council District 5
The Honorable Joe McDermott, King County Council, Council District 8
The Honorable Claudia Balducci, Regional Water Quality Committee Chair, Council District 6
Shannon Braddock, Deputy Executive, King County Executive Office
Jennifer Huston, Director, Federal and Regional Relations, King County Executive Office
Kamuron Gurol, Division Director, Wastewater Treatment Division (WTD), Department of Natural Resources and Parks (DNRP)
Jim Bolger, Environmental and Community Services Section (ECSS) Manager, WTD, DNRP
Jeff Stern, Sediment Management Program Manager, ECSS, WTD, DNRP
Dylan Orr, Interim Director, Environmental Health Services Division, Public Health – Seattle & King County
Ryan Kellogg, Assistant Division Director, Community Toxics and Science Policy, Environmental Health Services Division, Public Health – Seattle & King County

King County Detailed Comments on EPA's Proposed Plan for East Waterway

The Preferred Alternative-Inset Box

Page 4, Please correct the estimated dredging volume from 960,000 cy to 940,000 cy to be consistent with what is shown on page 46 of proposed plan.

Page 4, Long-term monitoring begins after the remedial action is complete. It is unclear why long-term monitoring is described as occurring after cleanup levels are achieved. The descriptions of types of monitoring are not consistent with East Waterway (EW) Feasibility Study (FS), which is consistent with a typical CERCLA project. We request the monitoring be described as in the FS for clarity.

Site Background

We recommend noting that Harbor Island was formed by 1909 using dredge fill from the Duwamish River estuary, and EW was created by 1905 and was authorized as a federal navigation channel by Congress by 1919. There is no text to give context about when EW was formed.

Tribal and Community Involvement

First paragraph, Page 7. *"Recreational users also frequent portions of the EW OU."* We believe this is a misleading statement. Only fishing from Spokane Street Bridge is frequent use of EW OU by the general public. Swimming and kayaking are not occurring at any frequency due to safety issues around commercial shipping activities.

First Paragraph, Page 7. *"Recreational fishing is known to occur in the EW OU despite a prominent education campaign..."* Recreational fishing is not a risky behavior; it is the consumption of resident fish and crab. In addition, fishing for salmon is common practice at Spokane Street Bridge and salmon do not have a "do not eat" advisory; most salmon species are safe to eat. We find the text to be misleading regarding fishing behaviors and what is safe recreational use. Figure 3 could be expanded to include the WA Dept of Health seafood advisory for the Duwamish River. This would allow readers to understand that salmon advisories are the same for Elliott Bay and the Duwamish Estuary but that resident seafood have different advisories.

We recommend the plan clarify the recreational use and fish advisory points.

Site Characteristics

Physical Characteristics

Fourth paragraph, Page 7: Please add discussion of two slips. They have not been described before being mentioned in 2nd paragraph of this subsection. There is no description of berthing depths for Slip 27 or Slip 36.

Page 7: define "Sill Reach" and "Junction Reach" while they are shown on the map, the names are not necessarily easy to understand, especially for people unfamiliar with Superfund and those who speak English as a second language.

First paragraph, Page 8. Please clarify that EW main body is marine and only the sill and junction reach can experience periods under high flow events of decreased salinity with more influence of freshwater flows from upstream Green River. The freshwater inflow from the Green River is only a thin-layer at the waterway's surface. The majority of the water column remains saline even under the 100-year flow

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 2

conditions. The organisms found in EW are marine, not freshwater. The text here is confusing and not clear about marine conditions of the site. In addition, it would be helpful to note the hydrodynamic circulation in the EW is controlled by tidal exchange with Elliott Bay to the north and freshwater inflow from the Green River (through the LDW).

Second paragraph, Page 8. Please consider adding that upland groundwater reaching the EW occurs within the tidal zone.

Bulleted list, page 8. The bullet describing the nearshore areas is not accurate. The Mound Area is not a nearshore, intertidal area. In addition, there are nearshore areas adjacent to or near T-30 that are not described. See Figure 7-1 of the EW FS.

Figure 6, Page 10 is not consistent with Figure 7-1 of the FS. For example, it is missing labels of certain nearshore areas adjacent to and near T-30 and implies they are part of deep main body or berthing areas, which they are not. Figure 6 also implies the Mound Area is nearshore habitat/area, when it is not. Please correct the errors in Figure 6 per the FS Figure 7-1.

Conceptual Site Model

First paragraph, Page 10. The text refers to the *"affected environmental media"* and includes soil, air, and groundwater. The EW OU baseline risk assessments focused on sediment, water, and biota in the EW. It is unclear why soil, air, and groundwater are listed in this paragraph. It leads to confusion, and therefore, we recommend these media be removed from the description of *"affected environmental media"* for the EW OU. In addition, the paragraph lists *"hazardous substances, pollutants, and contaminants"*. We find this confusing as it is not clear what the difference is between these and why all are listed. We recommend statement be simplified to just state *"contaminants"* as that is what was assessed in EW OU and what the subsection that follows refers to.

Subsection: Sources of Contamination

Second paragraph of section, page 10. Please clarify the *"continued efforts to reduce any ongoing off-site or upstream source of contamination..."* is conducted by the State and other local jurisdictions under other regulatory programs.

Fourth paragraph of section, page 10. This paragraph is confusing and needs clarification. The County and City have and continue to work on reducing the frequency and volume of CSO discharges to EW under their CSO control plans. The County and City also work to trace and control sources of pollution within the CSO basins. The City and Port work to control sources of pollution to storm drain systems discharging to EW not the volume and frequency of stormwater runoff; on County owned properties we maintain the stormwater drainage infrastructure (the County does not own or operate a municipal stormwater system within EW drainage basin). Washington Department of Ecology (Ecology) or U.S. Environmental Protection Agency (EPA) leads actions on upland cleanup sites, the County or City do not direct cleanup on upland facilities owned by others. The King County's Industrial Waste Program regulates the discharge of industrial wastewater to the sewer system. Please clarify the text in the paragraph based on this information.

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 3

Third paragraph, page 11. Please clarify statement "*Prior to implementing this proposed interim remedial action*" that EPA will work to control major sources of pollution from EW drainage basins not the upstream sources such as in the LDW and Green River drainage basins. The LDW source control sufficiency work is being led by Ecology in support of the LDW sediment cleanup.

Subsection: *Sediment Transport*

First paragraph of section, page 11, The text incorrectly states 40-75% of solids entering EW from upstream are estimated to leave the EW. The FS states that a 1.2 cm/yr net sedimentation rate is the best estimate for site-wide deposition, which was updated from 1.6 cm/yr in the EW Supplemental Remedial Investigation (SRI). According to the FS Section 5.1.3, between 67% and 80% of the sediment load that enters the East Waterway is transported out of the East Waterway and, conversely, that 20% to 33% of the incoming sediment load is retained within the East Waterway. Please correct the text to be consistent with FS.

Second paragraph of section, page 11. The description of net sedimentation rates for different parts of the EW are not in agreement with the FS. See Figure 5-1 of the FS. The geochronology cores showed net sedimentation in the shallow main body but the text in Proposed Plan says "*Limited or no deposition is predicted to occur in portions of the Shallow Main Body Reach...*" Please correct the discussion of areas of net sedimentation to be consistent with the FS, Figure 5-1. In addition, we believe it would be helpful to note the average site-wide net sedimentation rate is 1.2 cm/yr for EW (see page 5-8 of the FS).

Third paragraph of section, page 11. It would be helpful to note that significant bed scour or erosion of in situ bed sediments within the EW will not occur because of tidal or riverine currents. In addition, we recommend EPA add a statement regarding the role bioturbation plays in mixing top 10 cm (4 inches) as natural process; this is included on Figure 7 but not defined in text. It would be helpful to note that vessel propwash typically mixes the top 0.5 feet to 2.0 feet of sediment and not just note the potentially maximum scour depth of 4.7 feet in one portion of the main body.

Page 11: Please define "propwash"

Subsection: *Distribution of Contamination*

Third paragraph, Page 12. The Proposed Plan states, "*...in portions of the Shallow Main Body Reach and Deep Main Body Reach that have not been recently dredged, the depth of contamination is 5 to 15 feet...*". According to the FS, the depth of contamination for both the Shallow Main Body Reach and Deep Main Body Reach is 10 ft. The only area with contamination found below 10 ft is in the Mound Area, where the depth of contamination is as deep as 26 ft. Please update the text to be consistent with FS.

Page 12 and page 14: Proposed Plan states "*The contamination that is most frequently observed at elevated concentrations in subsurface sediment (deeper than 10 cm) are PCBs and mercury.*" Based on this statement, it is confusing why mercury is not included in Figure 8? In addition, it may be confusing why mercury is not in Table 2 given the statement on page 12. We suggest reference to section on *Summary of Site Risks* to help explain why mercury tissue data are not included in Table 2; that is, it is not contaminant of concern (COC) for human health based on seafood consumption pathway but rather a COC for benthic community based on concentrations found in sediments.

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 4

Table 2, page 14. Per the EW SRI, cPAHs should be listed as non-detected in brown rockfish. The concentration shown is the detection limit. Please correct this error. The Arsenic concentrations are for inorganic arsenic not total arsenic. Please correct the label to indicate this. The inorganic arsenic concentration for clams should range from 0.03 to 0.17 mg/kg. Other inorganic arsenic concentrations are presented to 2 significant figures so we recommend the clam upper end range be as well. All the average TBT concentrations shown in the table are in error; the table is showing maximum concentrations from Table ES-3 from the SRI. For example, the average concentration in rockfish is 160 µg/kg not 420 µg/kg; please correct these errors.

Current and Future Land Uses

First paragraph of section, page 15. EW was first used as cargo and marine vessel use prior to 1940s. Please see discussion in Section 2.2 of SRI. In the Junction Reach, tugboats regularly moor at Harbor Island Marina. We recommend this information be added to this section.

Third paragraph of section, page 15. The County does not own land adjacent to EW. In addition, State DNR does not own the aquatic lands but manages them on behalf of the State of Washington, the landowner of EW sediment bed. There is no mention of Olympic Tug and Barge as landowner adjacent to the EW. Please correct these errors.

How People and Wildlife May Be Exposed

Third Paragraph of section, page 15. Please modify the description of habitat brown rockfish use in EW. Per section 2.8.3 of SRI (page 61), brown rockfish are associated with structures such as riprap, piers, or submerged debris. During scuba sampling in the EW, brown rockfish were found to be common under piers in riprap habitats. In addition, raccoons are not a mammal that frequents the EW shoreline. It would be more appropriate to list harbor seals, which were also a receptor evaluated in the Ecological Risk Assessment.

Third Paragraph of section, Page 15: Proposed Plan states that "*Juvenile salmon primarily feed in suitable nearshore habitats.*" Does this mean in the EW? Because the diet and exposure of juvenile salmon in the superfund site has been a concern from the fisher community it might be good to include a statement here about how much time (% of this stage of life) could occur here.

First paragraph, page 16. Bald eagle, brock rockfish or Pacific herring are not listed by WDFW as a candidate species, threatened species, endangered species, or species of concern or by USFW as threatened or endangered species. Please remove these species or provide citations to support inclusion of these species.

Page 16, Figure 9: this figure implies that there are only 2 fish species of concern here. Please use add e.g., or add all species of concern.

Scope of the Remedial Strategy for the Harbor Island Superfund Site and the EW Operable Unit

First full paragraph on page 17, the following statement is not clear that risks are to human health and the environment from exposure to contaminants, and there is no clear statement about remediating contaminated sediment to address the unacceptable risk: "*The overall strategy for addressing contamination and the associated risks in the EW OU includes controlling sources of contamination to*

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 5

the EW OU and addressing the contaminated media that pose unacceptable risk." We recommend the statement be changed to the following for clarity: "The overall strategy for addressing **human health and environmental risks from** contamination and the associated risks in the EW OU includes **remediating contaminated sediments and** controlling sources of contamination to the EW OU ~~and addressing the contaminated media that pose unacceptable risk.~~"

Third paragraph, page 17: The first sentence "*EPA's long-term vision for the EW OU is to achieve the lowest contaminant levels possible in sediments, with the overarching goal such that there will be an associated reduction of contaminant concentrations in fish to levels that allow WA DOH to minimize fishing advisories.*" is not clear this is about PCBs (and possibly dioxin/furans and arsenic). These are the contaminants, based on remedial action objectives (RAOs) 1 and 2 in the FS with numeric preliminary cleanup goals (PRGs) based on natural background because risk-based threshold concentration were below background. The PRGs for other contaminants of concern and RAOs were based on achievable risk-based threshold concentrations. We believe EPA needs to be clear about the different contaminants and what is required to reduce risk to acceptable levels. For example, for RAO 3 in the FS, the PRGs were based on benthic sediment quality objective in Washington State's Sediment Management Standards. Yet this first sentence implies all contaminant levels need to be as low as possible in sediments. The cleanup needs to achieve risk-based levels when these levels are not below background. The last part of the sentence is specific to PCBs, which is the contaminant for which the WA DOH fish advisories are based on. In addition, that standard would be as low as practicable, consistent with the National Contingency Plan and CERCLA.

Third paragraph, page 17: The following statement is not consistent with other statements in this proposed plan: "*EPA also expects that in the long-term, with effective comprehensive source control throughout the Green/Duwamish River watershed, sediment PCB concentrations equivalent to the concentrations measured in non-urban background for Puget Sound (2 ppb PCBs) can be achieved at the EW OU.*"? PCBs in sediments of other Puget Sound urban waterbodies are not at this non-urban level of 2 ppb. We recommend honest communication to the public and PRPs on the challenges and the likelihood of this occurring in an industrial area of Seattle. We are committed to working towards the vision of lowest possible PCBs levels in the Duwamish River.

Summary of Site Risks

Subsection-Human Health Risks

First full paragraph, page 18. The sentence that states "*The routes of exposure included ingestion (oral exposures), inhalation, and dermal contact.*" is in error, as is the last bullet regarding *Current/future occupational exposures*. The EW baseline human health risk assessment (BHHRA) did not include inhalation of dust for occupational exposures. In addition, occupational exposures included incidental sediment ingestion. Please correct the errors by removing reference to inhalation pathway and change incidental soil ingestion to incidental sediment ingestion for occupational exposures.

Last paragraph on page 18. The following statement is not correct "*and the Lower Duwamish Waterway Fishers Study (Windward, 2016) which included an evaluation of local communities that fish from the Spokane Street Bridge.*" The LDW Fisher Study occurred after the EW BHHRA was completed, and therefore, was not considered in the EW BHHRA. Per the BHHRA, Section B.3.3.1.3, "respondents in the

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 6

API study were weighted to reflect their ethnic group's population in King County relative to their representation in the consumption study." EPA (Kissinger 2005) used 2000 US Census data for King County to adjust the Asian & Pacific Islander study to account for changes in population. Please remove the statement regarding the LDW Fisher Study.

Page 18: Under *Current/future recreational exposures* – Please clarify how EPA assigned one meal per month as the assumption for this group? We understand the EW BHHRA used the one-meal per month exposure scenario for informational purposes; a method for which a member of the public can use to assess risks associated with their individual behavior. See BHHRA Section B.3.1.1, B.3.3.1 and Table B.3-1.

Subsection-Risk Estimates

Page 20. There is no information provided to explain there is no site related risks associated with inorganic arsenic from consuming seafood. This is discussed in Section B.5.5.1.2 in the BHHRA. Incremental risks were equal to or less than 1×10^{-6} . Without adding some information about lack of site-related risk from inorganic arsenic in resident seafood, it is not clear why arsenic is not a risk driver for seafood consumption pathway as discussed in Section B.8.1 and Table B.8-1 of the BHHRA. Please add this information to clarify inorganic arsenic risks associated with seafood consumption.

Subsection-Ecological Risks

Benthic Invertebrate bullet, page 21. We recommend the following statement be modified as shown in bold: "*to **Washington State Sediment Management Standards, which are based on regionally developed effects-based threshold response values for benthic invertebrates. In select locations, exceedances of threshold response values were confirmed by conducting toxicity tests of EW OU sediments.***" We feel it is helpful to note state sediment standards were used in this assessment and to be clear, sediment toxicity tests were only used in select locations. We also recommend discussions of both benthic SQS and CSL values used in the benthic community assessment be discussed as they two give different degrees of potential adverse effects to the benthic community.

Benthic Invertebrate bullet, page 21. The following statement is how risk-based threshold concentration in sediment was derived: "*Sediment thresholds were then derived using a sediment-tissue relationship developed from site-specific information for the EW OU.*" The risk-based threshold concentration was then used in development of remedial action level (RAL) and PRG for TBT in the FS. It is confusing to have this statement appear in this section of the plan. We recommend this be discussed in section on risk-based threshold concentrations or section discussing RALs.

List of bullets, page 22. The bullet describing the percent of the waterway sediments posing adverse effects to benthic community overstates the probable risk to benthic community. Per the EW SRI, Section 5.2.2.1, "Adverse effects are predicted in approximately 21% of the EW area, which had contaminant concentrations or biological effects in excess of the CSL values. The remaining 39% of the EW area had contaminant concentrations or biological effects between the SQS and CSL values, indicating the potential for minor adverse effects to benthic invertebrate communities." Please expand on the bullet to express the risks to the benthic community in the same manner described in the EPA approved SRI and EW Baseline Ecological Risk Assessment (BERA). In addition, confirmatory toxicity tests

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 7

were performed on a subset of sediment samples. The bullet implies all sediment chemistry risks were confirmed with toxicity tests.

List of bullets, page 22. It is unclear if the EW BERA results are summarizing the COCs or the risk drivers. The SRI, Table 5-3 presents an account of both COCs and risk drivers. Risk drivers do consider the uncertainty in the BERA. Please clarify what results are being presented and then make them consistent with the SRI, Table 5-3.

Table 4, page 23. The maximum HQ for benthic community provided in BERA, Table A.6-1 is 350 not 355. In addition, the primary COCs for benthic community based on the percent of sediment samples above SQS shown in BERA. Table A.6-1 first row would be PCBs and mercury, not TBT. TBT is correctly listed in second row of Table 4 in the plan.

Table 4, page 23. Why is HQ range for benthic community under sediment include < 1.0 but not for TBT under tissue? Only 2 areas had HQs > 1 for TBT. This same inconsistency occurs for crab and fish, which had HQs < 1 to > 1.0 for all contaminants assessed. Is the intent to only show HQs for the COCs listed? If so, then TBT should say < 1.0 to 3.3.

Table 4, page 23. The HQ ranges for fish do not agree with information presented in BERA, tables A.6-16, A.6-24 and A.6-28. For the three fish receptors, the HQ range for dietary does should be < 1.0 to 2.5 for three COCs and the HQ range for tissue should be < 1.0 to 7.9 for the two COCs. Please correct these values.

Basis for Taking Action

List of bullets, page 23. First and second bullets, editorial fix to delete "cancer" first use. It is used appropriately later in each sentence.

Remedial Action Objectives

First paragraph of section page 23. We recommend EPA continue to engage with the public about the challenges and probability that a non-urban background can be achieved in an industrial urban area of Seattle. Based on current information, achievement of non-urban background for PCBs is not likely based on Appendix A of FS.

Second paragraph of section, page 23. It is unclear the expectation of this following statement *"Consistent with the intent of this Proposed Plan for an interim ROD which will require cleanup of all sediments greater than the Remedial Action Levels."* The depths to which RALs apply to determine horizontal extent of contamination were not discussed in the Proposed Plan. The remedial alternatives presented in the Proposed Plan were developed in the FS using RALs applied to both the top 10 cm and the top 60 cm of sediment in EW. In addition, there will be areas with structural setbacks where sediment remediation will be limited, as noted in the FS Appendix A. We recommend EPA remove the word "all" in this statement to be consistent with findings of the FS Appendix A.

Page 24, RAO bullets. It is unclear what exactly "reduce to protective levels" mean in terms of remedial action objectives. To clarify, we recommend EPA state that RAOs are narrative cleanup objectives, and they are supported by numeric cleanup levels.

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 8

Page 24, The East Waterway ROD can adopt cleanup levels for the contaminants of concern. All of the remedial alternatives except the No Action alternative will achieve the remedial action objectives (RAOs) and associated cleanup levels provided in the Feasibility Study for the protection of benthic community, crab, and fish. We request that EPA include RAOs and adopt associated cleanup levels for protection of benthic community (RAO 3), and crab and fish (RAO 4). The RAO for the protection of human health from direct contact can also be achieved immediately following completion of cleanup construction; however, modeling suggests the incoming sediments are likely to result in increase in site-wide average arsenic concentrations (the COC for this RAO) overtime.

The Plan notes that source control actions within Green/Duwamish Watershed will determine the ultimate sediment cleanup levels for PCBs, dioxin/furans, and arsenic. While we are not able to predict with certainty the ultimate outcome of upstream source control efforts, we expect the resulting concentrations for these three contaminants in the East Waterway post remedy will equilibrate overtime towards incoming levels. We request EPA include RAOs 1 and 2 and adopt target sediment cleanup levels in the ROD for these contaminants. The ROD can provide language stating they can be revised to reflect what is achieved in the long run based on upstream source control. We request EPA include RAOs and associated target cleanup levels for protection of human health (RAOs 1 and 2) with a process outlined to adjust cleanup levels, if necessary, in future.

Preliminary Remediation Goals (PRGs)

Page 24, EPA's ROD can discuss PRGs for contaminants of concern. We request EPA add in discussion of PRGs for the RAOs.

Applicable or Relevant and Appropriate Requirements

Page 24 and page 28, there are ARARs that apply to this action. We believe these should have been included in the proposed plan for review. We request the ARARs relevant to the action be included in the ROD so that remedial design can appropriately account for these.

Risk-Based Preliminary Remediation Goals

Page 25, EPA can establish cleanup levels for contaminants of concern. For example, the cleanup levels for the 29 COCs for protection of benthic community and for PCBs for protection of fish (Remedial Action Objectives 3 and 4, respectively).

Remedial Action Levels

Page 25, the depths to which RALs apply to determine horizontal extent of contamination were not discussed in the Proposed Plan. The remedial alternative presented in the Proposed Plan were developed in the EW FS using RALs applied to the top 10 cm and top 60 cm of sediment in EW. Please add this detail as it is the basis for the areal extent of cleanup, and associated volumes and costs presented for remedial alternatives in the proposed plan. It also will direct the remedial design work.

Page 25, per the FS, RALs were selected for human health COCs and a subset of ecological COCs based on co-located contaminant patterns. The text in this section implies RALs were developed for all ecological COCs. Please clarify the text regarding which contaminants have RALs.

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 9

Page 25: Provide more information on why two RALs for PCBs were considered and clarify that different PCB RALs were used to develop different remedial alternatives.

Remedial Technologies Applied to Alternatives

Page 26/27 (In-situ treatment), states "*...may require additional treatment or other containment strategies if needed to assure that sediment concentrations are less than the RALs and ultimately that the final cleanup levels are attained.*" In-situ treatment does not change the bulk sediment concentration but rather significantly reduces the bioavailability of a contaminant such as PCBs. Therefore, the bulk sediment can still be above a RAL where in-situ treatment is successfully used. Please clarify the statement in text to reflect this.

Page 26 or on Page 41: Please address the question we've heard from community on whether dredging will kill the resident fish in the area and, if so, what the expected impacts of that will be.

Sediment Disposal

Page 27: Proposed Plan states "*Data collected during the SRI/FS indicate that the dredged material is likely to be non-hazardous under the Resource Conservation and Recovery Act (RCRA) and can be disposed at a facility that accepts non-hazardous waste.*" It would be helpful to explain to the reader the different types of waste disposal and why this waste, even though it's coming from a superfund site, would not be considered hazardous waste. Please define what the definition of a hazardous waste is for disposal purposes.

Institutional Controls

Page 27 (Waterway use restrictions and regulated navigation areas), please define what spuds are and how they stabilize vessels.

Page 27 (land use restrictions), it is unclear how land use restrictions would apply to remedial technologies within the EW. For example, caps would be addressed through waterway use restrictions, not land use restrictions. Land use restrictions typically refer to zoning and use regulations for properties. Please clarify this.

Monitoring

Page 28, Proposed Plan states "*....achieves the performance standards to evaluate short and long-term effectiveness of the interim action, and in this case to develop cleanup levels that are achievable and protective.*" Is a comma missing between "standards" and "to" in the statement? If not, it is unclear what the intent of the statement is. In addition, please clarify it is only cleanup levels related to PCBs, dioxin/furans and arsenic as they relate to RAOs 1 and 2.

Page 28, second paragraph. It is unclear why monitoring of potential sources of contamination would help "*to better understand the hydrodynamics of the Green/Duwamish Watershed*". Monitoring to understand incoming solids chemistry could include EW drainage area stormwater solids and waterway suspended solids from upstream. These monitoring programs will not assist with understanding hydrodynamics of the watershed. Dept. of Ecology is leading a Green/Duwamish Pollutant Loading

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 10

Assessment that could assist with understanding source loading to the watershed. Please clarify the text in this paragraph.

Remedial Alternative

Page 28, the EW FS evaluated 10 remedial alternatives in Section 9 and 10 of the FS, not Appendix L. Please correct this error.

Page 29, Alternative Component 2: Limited Assess Areas. The Option C+ incorrectly describes where diver-assisted hydraulic dredging under-pier areas would occur. The FS tables 8-2, 8-4, and 8-5 as well as associated FS text state that diver-assisted hydraulic dredging under-pier areas followed by in-situ treatment would occur where PCBs and mercury concentrations *exceed* the cleanup screening level (CSL). These levels are 65 mg/kg OC for PCBs and 0.59 mg/kg for mercury. Only Option E includes diver-assisted hydraulic dredging under-pier areas for areas exceeding RALs. Please correct this error.

Page 29, last full paragraph. We agree it is inappropriate to use a 7% discount rate for the East Waterway cleanup. In addition, if EPA thinks they need to mention this, the current recommendations in the Office of Management and Budget Circular A-94 Appendix C, revised December 2022, indicates that the discount rate ranges from 1.2% for a 3-year investment to 2.0% for a 30-year investment.

Page 29, last sentence, please add "and are expressed in 2016 dollars" to the end of the sentence stating costs shown are in net present value.

Page 30, Table 6. Please add table footnote to clarify Option C+ that diver-assisted hydraulic dredging under-pier areas followed by in-situ treatment would occur where PCBs and mercury concentrations exceed the cleanup screening level.

Comparative Analysis of Alternatives

Page 39, the last paragraph under Overall Protection of Human Health and the Environment. Although Alternatives 2C and 3E remediate a slightly large footprint, the overall risk reduction is not different from the other alternatives, except the No Action alternative. Please add the following to the end of the last sentence "but do not result in different risk reduction overtime than the other five alternatives."

Page 39, under Compliance with ARARs. The sections where ARARs are discussed in the FS is Section 4.1, 9.1.1.2 and 10.1.2. Please correct the FS Section citations.

Page 40, under Long-Term Effectiveness and Permanence, 5th paragraph regarding residuals management cover (RMC) layer. Please direct reader to FS Section 7.2.6.5 and 8.12, for more information on RMC.

Page 43, under Cost. The cost presented are not at 7% discount rate but at 0% discount rate for the reasons outlined in FS Appendix E and text on page 29 of the Proposed Plan. The 7 should be changed to 0 in the sentence starting with "Using a 7 percent discount rate..."

Page 43, under Cost. We recommend EPA note the costs for the alternatives are in 2016 dollars.

King County Detailed Comments on EPA's Proposed Plan for East Waterway

August 10, 2023

Page 11

Preferred Alternative

Page 44, 2nd paragraph. While we agree all alternatives rely on MNR to further reduce contaminant concentrations following the active remedy, it is only PCBs and dioxin/furans for which lower sediment concentrations are required to achieve further risk reduction for the protection of human health from seafood consumption (RAO 1). All other COCs for RAOs 2, 3 and 4 are expected to be achieved following active remedy. Arsenic for RAO 2 is expected to meet PRG (based on the FS) directly following construction and then increase with time due to upstream inputs. Please clarify the text.

Page 44 or 45, create a new paragraph: While we are not able to predict with certainty the ultimate outcome of upstream source control efforts, we expect the resulting concentrations for PCBs, dioxin/furans, and arsenic in the East Waterway post remedy will equilibrate overtime towards incoming levels. As presented in earlier comments, a final ROD can set such levels now but reflect they could be revised later based upon what is achieved in the long run based both sediment cleanup and on upstream source control efforts. We request EPA provide clarity to the community and PRPs as to how the site is expected to reach closure with cleanup levels that are protective of human health.

Page 45, Please note the cost for the Preferred Alternative is in 2016 dollars. We recommend the cost be adjusted to 2023 dollars in the ROD to more accurately reflect the cost estimate for the remedy.

Rationale for Selecting the Preferred Alternative

Page 47, 3rd paragraph. See earlier comments regarding statements about EPA's long-term vision. This is specific to PCBs dioxin/furans, and arsenic for protection of human health. Most COCs will achieve the PRGs in the FS following active remedy.